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SOME ECONOMIC FACTS ABOUT THE CALIFORNIA LUMBER AND TIMBER PRODUCTS INDUSTRY AND SIZE OF ITS DIPENDENT POPULATION

By Edward C. Crafts, Division of Forest Economics

The significance of forest industries in California's economy, the changes being wrought by the defense program and the employment capacity represented by these industries are all factors in a single entity which, when taken together, may indicate in some measure the possible future contribution of forestry in easing the inevitable period of post-war economic retrenchment.

Owing to the influx of large numbers of workers needed in the manufacture of aircraft and ships and in other defense activities, California is expected to have an even more critical problem of post-war adjustment than will exist in many other sections of the Nation. Indices of the magnitude of this recent industrial expansion are that a third more industrial workers were employed in California in June 1941 than a year ago; shipbuilding employment for the same period was up 118 percent over a year ago; the aircraft industry alone added 4,000 new workers in May 1941; and 17 percent of the national total of defense contracts has been given to West Coast firms.

In order that management, labor and government may more effectively study the problem of potential employment in the light of existing knowledge[1/] lumber industry facts regarding establishments, wage earners, wages,

1/ Post-war employment is one of the social problems recommended for study in the June 1, 1941, report of the California State Land Use Planning Committee entitled "Suggestions for a unified state agricultural program to meet the impacts of war."

value of product, and other items have been compiled in this digest for ready reference. The effects of the defense program, particularly in regard to employment trends and availability of labor in the lumber industry have been summarized, as have data on existing and potential populations dependent on forest resources. Included in the latter are the employment demands of a six-year shock-absorber program of useful public works on the national forests.

Forest Industries in the Economy of California

In comparison with other industrial activities of the State, forest products occupy a respected but not a preeminent position. Among the four basic extractive industries of the state, which are agriculture, mining, lumbering and fisheries, lumbering has always ranked a poor third based upon value of product. For example, in 1940, the value of lumber products was but 9 and 16 percent respectively of the value of agricultural and mining products.2/

When compared with other types of manufacturing instead of with simply extractive industries, lumber and timber products rank high based on the value added by manufacture. In 1939, 24 different industries added in excess of ten million dollars each to their products by the manufacturing process, and sawmills, veneer mills, and cooperage-stock mills, including those combined with logging camps and planing mills, ranked sixth in this classification with a value added of $37,286,601 (table 1). Exceeding this amount were the following industries, listed in order of magnitude: petroleum refining; aircraft and parts including aircraft engines; canned and dried fruits and vegetables; printing and publishing newspapers; and bread and other bakery products. If the value added by manufacture of the planing mills, logging camps and logging contractors not operating in conjunction with sawmills is added to that of the saw, veneer, and cooperage mills, the total value added by manufacture of about 53 million dollars, places the industry fourth among manufacturing enterprises of the State in 1939. Of the total value added by all manufactures in the State, lumber and timber basic products comprised 4.67 percent; sawmills, veneer mills, and cooperage mills 3.29 percent; planing mills not operated with sawmills 1.33 percent; and paper and allied products 1.81 percent (table 2). It is noteworthy that, when considered together, the three industrial groups of lumber and timber basic products, furniture and finished lumber products, and paper and allied products rank third in number of establishments (10.77 percent of total), second in number of wage earners (14.46 percent), second in wages paid (14.25 percent), fifth in cost of materials (5.75 percent), fourth in value of products (7.31 percent), and second in value added by manufacture (9.59 percent)(table 3).

An appraisal of the significance of the lumber industry to the area economy has been made by the Federal Reserve Bank of San Francisco. Because the following statement applies to the entire Twelfth Federal Reserve District, and so includes the heavy lumbering states of Washington and Oregon, it definitely overemphasizes importance of the lumber industry as far as California is concerned. Nevertheless it is worth repeating:

2/ California State Chamber of Commerce, Economic Survey Report No. 1, Series 1941-1942.

Table 1.- Principal California industries 1939, including all which have a value added by manufacture of 10 million dollars or more1/

Industry	Value added by manufacture: Dollars	Percent of total: Percent
Petroleum refining	82,886,752	7.31
Aircraft and parts, including aircraft engines	60,102,785	5.30
Canned and dried fruits and vegetables (including canned soups)	59,977,152	5.29
Newspapers: publishing and printing	52,536,637	4.63
Bread and other bakery products (excluding biscuit, crackers, and pretzels)	43,952,631	3.87
SAWMILLS, VENEER MILLS, AND COOPERAGE-STOCK MILLS, INCLUDING THOSE COMBINED WITH LOGGING CAMPS AND WITH PLANING MILLS	37,286,601	3.28
Motor vehicles, motor-vehicle bodies, parts and accessories	28,031,233	2.47
Chemicals not elsewhere classified	22,912,563	2.02
Meat packing, wholesale	20,759,324	1.83
Tires and inner tubes	18,401,454	1.62
Malt liquors	18,171,436	1.60
General commercial (job) printing	17,876,330	1.57
Tin cans and other tinware not elsewhere classified	16,149,502	1.42
Beet sugar	15,318,912	1.35
PLANING MILLS NOT OPERATED IN CONJUNCTION WITH SAWMILLS	15,116,484	1.33
Canned fish, crustacea, and mollusks	14,010,151	1.23
Oil-field machinery and tools	13,626,873	1.20
Paints, varnishes, and lacquers	12,612,604	1.11
Shipbuilding and ship repairing	12,001,125	1.06
Prepared feeds (including mineral) for animals and fowls	11,887,832	1.05
Nonalcoholic beverages	11,535,671	1.02
Stoves, ranges, water heaters, and hot-air furnaces (excluding electric)	10,943,731	0.96
Machine-shop products, not elsewhere classified	10,794,571	0.95
Ice cream and ices	10,258,344	0.90
(Industries, 10 million dollars and more, total)	(617,150,698)	(54.37)
All industries, total, 1939	$1,135,157,587	100.00

1/ Source: Census of Manufactures 1939. Preliminary report. State Summary, California.

Table 2.- California Forest Products Manufactures by Groups. 1939[1/].

Industrial Group	Establishments	Wage earners	Wages	Cost of materials	Value of products	Value added by manufacture: Amount	Percent of State total	Percent of group total
	Number	Number	Dollars	Dollars	Dollars	Dollars	Percent	Percent
LUMBER AND TIMBER BASIC PRODUCTS	434[2/]	21,478	29,371,323	34,233,512	87,193,148	52,959,636	4.67	100.00
Logging camps and logging contractors (not operating sawmills)	23	282	327,220	284,030	840,581	556,551	0.05	1.05
Planing mills not operated in conjunction with sawmills	269	4,841	6,993,188	18,764,169	33,880,653	15,116,484	1.33	28.54
Sawmills, veneer mills, and cooperage-stock mills, including those combined with logging camps and with planing mills	142	16,355	22,050,915	15,185,313	52,471,914	37,286,601	3.29	70.41
FURNITURE AND FINISHED LUMBER PRODUCTS	780	13,207	15,799,346	40,031,391	75,378,799	35,347,408	3.11	100.00
Baskets for fruits and vegetables	8	109	111,180	489,747	964,724	474,977	0.04	1.34
Caskets, coffins, burial cases, and other morticians' goods	36	347	505,328	1,548,334	3,068,927	1,520,593	0.13	4.30
Cooperage	11	185	252,270	1,002,617	1,546,324	543,707	0.05	1.54
Household furniture, except upholstered	196	3,484	4,083,042	6,604,406	15,144,021	8,539,615	0.75	24.15
Laboratory, hospital, and other professional furniture	10	89	96,763	320,391	555,547	235,156	0.02	0.67
Mattresses and bedsprings	54	1,369	1,742,136	4,669,762	8,994,059	4,324,297	0.38	12.23
Mirror frames and picture frames	16	103	122,388	162,299	471,871	309,572	0.03	0.88
Office furniture	16	126	136,509	344,756	733,065	388,309	0.03	1.10
Partitions, shelving, cabinet work, and office and store fixtures	95	1,502	2,097,078	3,264,511	7,422,053	4,157,542	0.37	11.76
Public-building furniture	8	53	52,088	77,571	250,159	172,588	0.02	0.49
Upholstered household furniture	82	2,193	2,591,780	5,079,960	10,292,115	5,212,155	0.46	14.75
Venetian blinds	68	776	880,911	2,387,704	4,557,387	2,169,683	0.19	6.14
Window and door screens and weather strip	15	108	137,986	364,781	821,170	456,389	0.04	1.29
Window shades	21	97	113,835	589,341	936,796	347,455	0.03	0.98
Wooden boxes except cigar boxes	76	1,722	1,821,020	7,666,624	11,326,448	3,659,824	0.32	10.35
Wood preserving	11	245	344,022	3,944,662	5,269,015	1,324,353	0.12	3.75
Wood products not elsewhere classified	51	450	445,172	841,540	2,000,194	1,158,654	0.10	3.28
Other	6	249	265,838	672,385	1,024,924	352,539	0.03	1.00
PAPER AND ALLIED PRODUCTS	114[3/]	5,149	6,854,546	21,367,794	41,917,409	20,549,615	1.81	100.00
Converted paper products not elsewhere classified	20	347	385,668	1,606,162	3,794,475	2,188,313	0.19	10.65
Die-cut paper and paperboard, and converted cardboard	8	111	135,856	356,432	839,729	483,297	0.04	2.35
Envelopes	11	331	403,409	911,225	1,963,648	1,052,423	0.09	5.12
Paper and paperboard mills	12	2,171	3,261,801	8,524,084	17,501,256	8,977,172	0.80	43.68
Paper bags, except those made in paper mills	9	282	280,440	1,784,180	2,829,174	1,044,994	0.09	5.09
Paperboard containers and boxes not elsewhere classified	54	1,907	2,387,372	8,185,711	14,989,127	6,803,416	0.60	33.11

1/ Source: Census of Manufacturers 1939. Preliminary report. State Summary California.
2/ Excludes 1 establishment, figures for which are withheld to avoid disclosing data reported by individual establishments.
3/ Excludes 6 establishments, " " " " " " " " " " " " " " " (No. wage earners for 6 establishments is 260)

Table 3.- Establishments, wage earners, wages, cost of materials, value of products and value added by manufacture for major manufacturing groups in California. 1939[1/].

Industrial group	Establishments		Wage earners		Wages		Cost of materials		Value of products		Value added by manufacture	
	Number	Percent	Number	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent
Total all industries	12,329	100.00	275,482	100.00	365,114,340	100.00	1,663,021,936	100.00	2,798,179,523	100.00	1,135,157,587	100.00
Food and kindred products	3,620	29.36	71,667	26.02	82,118,498	22.49	597,790,927	35.94	897,762,039	32.07	299,971,112	26.42
Tobacco manufactures	17	0.14	708	0.26	629,370	0.17	1,093,658	0.07	2,168,183	0.08	1,074,525	0.09
Textile-mill products and other fiber manufactures	124	1.01	4,492	1.63	4,662,088	1.28	12,005,875	0.72	27,789,349	0.99	15,783,474	1.39
Apparel and other finished products made from fabrics and similar materials	1,037	8.41	22,397	8.13	20,659,358	5.66	51,913,806	3.12	97,720,825	3.49	45,807,019	4.04
LUMBER AND TIMBER BASIC PRODUCTS	434	3.52	21,478	7.80	29,371,323	8.04	34,233,512	2.06	87,193,148	3.12	52,959,636	4.67
FURNITURE AND FINISHED LUMBER PRODUCTS	780	6.33	13,207	4.79	15,799,346	4.33	40,031,391	2.41	75,378,799	2.69	35,347,408	3.11
PAPER AND ALLIED PRODUCTS	114	0.92	5,149	1.87	6,854,546	1.88	21,367,794	1.28	41,917,409	1.50	20,549,615	1.81
Printing, publishing, and allied industries	1,866	15.14	15,919	5.78	26,464,180	7.25	38,837,723	2.34	138,860,307	4.96	100,022,584	8.81
Chemicals and allied products	671	5.44	9,936	3.61	14,292,550	3.91	91,235,385	5.49	167,528,572	5.99	76,293,187	6.72
Products of petroleum and coal	105	0.85	9,443	3.43	16,817,842	4.61	290,822,819	17.48	379,207,082	13.55	88,384,263	7.79
Rubber products	60	0.49	4,865	1.77	7,730,889	2.12	37,172,051	2.24	61,161,026	2.19	23,988,975	2.11
Leather and leather products	111	0.90	2,405	0.87	2,626,870	0.72	6,721,414	0.40	12,367,174	0.44	5,645,760	0.50
Stone, clay and glass products	478	3.88	11,470	4.16	15,197,381	4.16	27,200,121	1.64	73,424,357	2.62	46,224,236	4.07
Iron and steel and their products, except machinery	674	5.47	26,867	9.75	38,252,934	10.48	109,252,362	6.56	208,258,095	7.44	99,005,733	8.72
Nonferrous metals and their products	528	4.28	5,077	1.84	6,973,402	1.91	17,468,184	1.05	34,342,683	1.23	16,874,499	1.49
Electrical machinery	177	1.44	3,796	1.38	5,055,688	1.38	16,643,169	1.00	32,671,393	1.17	16,028,224	1.41
Machinery (except electrical)	803	6.51	13,347	4.84	20,813,143	5.70	38,394,920	2.31	102,643,185	3.67	64,248,265	5.66
Motor vehicles, trailers, bodies, parts, and accessories	104	0.84	6,286	2.28	9,572,948	2.62	91,076,798	5.48	119,427,797	4.27	28,350,999	2.50
Transportation equipment except automobiles	93	0.75	20,056	7.28	31,414,414	8.60	33,958,746	2.04	106,256,337	3.80	72,297,591	6.37
Miscellaneous industries	491	3.98	3,647	1.32	4,710,545	1.29	9,422,050	0.57	22,814,648	0.82	13,392,598	1.18
Other[2/]	42	0.34	3,268	1.19	5,103,025	1.40	96,379,231	5.80	109,287,115	3.91	12,907,884	1.14

1/ Source: Census of Manufactures 1939. Preliminary report. State Summary California.

2/ Includes data from enterprises in nine of the above industrial groups which have been combined to avoid disclosing information about individual establishments.

"Active operations in the district lumber industry are of particular importance to the economy of this area since, year after year, and despite recent spectacular advances in the aircraft industry, local saw and planing mills and logging camps have employed more wage earners, paid out a larger volume of wages, and, up to the present time, have had a higher annual value of output than any other single manufacturing industry in the seven western states. In 1940, for example, an average of 115,000 workers, receiving nearly $180,000,000 in wages, produced lumber and timber products valued at well over $500,000,000. Available information indicates, however, that if present anticipations are realized, the Pacific Coast aircraft industry will attain top position in 1941."3/

Effects of the Defense Program

Since the beginning of World War II, and especially during the last two quarters of 1940 and the first quarter of 1941, both lumber production and orders have risen sharply. This change, coupled with great expansion in other industrial activities, particularly aircraft production and shipbuilding, may or may not signify a shift in the relative position of the lumber industry in the State's economy. Illustrative of recent activity are the 563 million board feet of lumber purchased or earmarked by the Army and Navy in the third quarter of 1940 and intended for immediate use primarily in the construction of troop cantonments. Although this amount was for the entire Nation, mills of the Twelfth Federal Reserve District, which includes the seven western States, received orders for four billion board feet in this quarter, which was a billion board feet more than those received in the preceding quarter. Non-military demands resulting from forward buying to avoid price advances was equally responsible with defense orders for the sharp increase in demand.

For the western pine region, of which California comprises an important segment, accummulative statistics for approximately the first two quarters of 1941 indicate that, in comparison with the same period in 1940, production was up 15.8 percent, shipments up 21.3 percent, accepted orders up 30.3 percent, and stocks down 15.4 percent. In the redwood region, consumption in the first half of 1941 was up 28.2 percent over the first half of 1940, while lumber stocks at the end of June 1941 were down 15.7 percent from the same time the year before.

Car loadings, particularly of lumber, piling and ties, also reflect the accelerated industrial tempo as indicated in table 4. For example, in the last two quarters of 1940 lumber car loadings were up 18.5 and 31.8 percent respectively over the same quarters in 1939, and it is estimated by the Pacific Coast Transportation Advisory Board that third quarter lumber car loadings in 1941 will be up 28.2 percent over the comparable period in 1940. Thus in two years, car loadings in this quarter will have jumped about 50 percent.

3/ Monthly Review, Business Conditions in the Twelfth Federal Reserve District, Federal Reserve Bank of San Francisco, March 1, 1941.

Table 4.- Actual and prospective railroad car loadings of forest products in eleventh district[1] of Association of American Railroads. 1940-1941[2]

Commodity	Actual car loadings 1940									
	1st quarter		2nd quarter		3rd quarter		4th quarter		Entire year	
	Number	Percent change from year ago	Number	Percent change from year ago	Number	Percent change from year ago	Number	Percent change from year ago	Number	Percent change from year ago
Logs	3,863	-12.0	11,239	+0.7	12,586	-1.6	8,847	-18.9	36,535	- 6.9
Lumber (incl. piling and ties)	10,626	+13.8	12,564	+8.9	14,498	+18.5	16,386	+31.8	54,074	+18.8
Mill products (exclu. lumber)	725	+ 1.0	977	-31.3	1,187	-23.7	705	- 7.7	3,594	-19.4
Total	15,214	+ 5.3	24,780	+ 2.8	28,271	+ 6.4	25,938	+ 7.7	94,203	+ 5.6

Commodity	Estimated car loadings 1941									
	1st quarter		2nd quarter		3rd quarter		4th quarter		Entire year	
	Number	Percent change from year ago	Number	Percent change from year ago	Number	Percent change from year ago	Number	Percent change from year ago	Number	Percent change from year ago
Logs	4,594	+18.9	12,145	+8.1	15,666	+24.5	no data		no data	
Lumber (incl. piling and ties)	13,055	+22.9	13,855	+10.3	18,587	+28.2	"		"	
Mill products (exclu. lumber)	956	+31.8	1,078	+10.3	1,254	+ 5.6	"		"	
Total	18,605	+22.3	27,078	+ 9.3	35,507	+25.6	28,294	+ 9.1	109,484	+16.2

1/ Eleventh district includes California, Nevada, Arizona and approximately western two-thirds of New Mexico
2/ Source: Proceedings Pacific Coast Transportation Advisory Board and advance estimates of this Board.

These facts, coupled with others such as taking over of 50 percent of the tonnage of intercoastal vessels by the Maritime Commission, and prospects of similar demands on the coastwise lumber schooners, may foreshadow possible bottlenecks in transportation, in supply of seasoned lumber in the common and box grades, in logging and milling machinery and equipment such as tractors, kilns, and saws, in products used in the fabrication of forest products such as creosote, and in the availability of skilled and unskilled labor. In fact there are already some shortages in box lumber, Douglas fir plywood, and certain furniture woods, especially alder and the imported Philippine mahogany.

Employment has risen quite steadily during the past year as illustrated by table 5 which summarizes monthly changes in number of wage earners in the lumber and allied products industries. In logging and sawmills there have been monthly gains of from 1.5 to 10 percent over the preceding year; furniture has shown recent spectacular advances up to 25 percent, and considering all products, roughly 20 percent more employees were on the payrolls in July 1941 than in July 1939.

This increase in employment has naturally resulted in few skilled workers remaining without work. Surveys by the California State Department of Employment have shown that only 9 band headsaw operators, and 15 circular headsaw operators were registered with unemployment offices in April 1941. Only 12 log scalers and 46 hand saw filers were registered in June. No skilled workers were registered as available in planing mill or wood preserving occupations in April; only 1 in the manufacture of veneer; and 4 in the manufacture of paper and pulp.

It is not expected that activity in forest industries will continue to advance in the future as it has during the last half of 1940 and the first three quarters of 1941. The rate of increase may level off at a high plane of activity until the defense stimulus has been spent; thereafter sharp curtailment may occur despite the possible cushioning effect of ordinary consumer demand that has been sidetracked during the defense period. In view of these expectations, the numbers of people dependent on forest industries and forest resources in 1939, the last year of available record, may serve as some criterion of anticipated future dependency. Although 1941 industrial dependency has gained about 20 percent over 1939, this increase appears temporary; and it is reasonable therefore to look for future material increases to come mainly from more intensive land management by forest owners rather than from industrial expansion.

Population Dependent on Forest Industries

Number of Workers

Of the 34,685 wage earners dependent on lumber and timber basic products, and furniture and finished lumber products in 1939, nearly half or 16,637 found employment in logging camps, sawmills and veneer and cooperage mills; some 4,800 in planing mills not operated in conjunction with sawmills; 1,722 in wooden box factories, and lesser numbers in wood preserving, baskets, and other wood products not classified elsewhere. The furniture group includes manufacturers of both wooden and metal furniture, but the latter is relatively unimportant compared to the wood products classified in this group.

Table 5.- Monthly changes in numbers of wage earners in lumber and allied products industries, June 1940 - July 1941[1/]

Month	Logging and sawmills		Millwork and misc. woodwork		Furniture		Other wood manufacturers		All lumber and allied products	
	Percent change from		Percent change from		Percent change from		Percent change from		Percent change from	
	A year ago	A month ago	A year ago	A month ago	A year ago	A month ago	A year ago	A month ago	A year ago	A month ago
June 1940	+8.6	+3.2	+1.3	-2.8	+2.4	-2.0	-6.8	+3.7	+5.0	+1.0
July	+6.8	-0.5	+17.1	+2.7	-3.9	-1.3	-4.8	-1.8	+5.9	-0.1
August	+8.5	+5.3	+2.4	+(A)	-5.1	+5.6	-4.1	+3.3	+4.1	+4.2
Sept.	+5.8	-1.2	+10.4	(B)	+0.8	+5.8	-7.7	-1.9	+4.9	+0.2
Oct.	+4.4	-0.1	+ 6.9	+2.6	+5.6	+4.5	-0.5	+3.2	+4.9	+1.5
Nov.	+4.7	-4.2	+ 8.3	+4.2	+6.3	+0.2	-2.0	-12.9	+5.4	-2.1
Dec.	+6.6	-6.4	+ 9.1	+0.9	+10.6	+2.0	+0.9	+0.9	+7.7	-2.8
Jan. 1941	+1.5	-14.1	+ 7.3	-3.3	+15.0	-3.9	+1.1	-6.5	+5.6	-9.2
Feb.	+4.5	-0.7	+ 6.6	-1.2	+14.2	+3.0	+10.8	+3.5	+7.5	+0.2
March	+5.9	+6.1	+ 5.5	-2.0	+10.7	+0.9	+16.1	+8.1	+7.4	+3.2
April	+5.9	+9.9	+ 5.5	+3.5	+10.5	-0.5	+ 9.2	+6.1	+6.9	+6.0
May	+6.8	+13.3	+ 9.6	+5.3	+15.4	+2.6	+14.4	+6.7	+9.4	+9.1
June	+3.3	+ 2.4	+18.0	+7.1	+21.2	+2.5	+16.2	+4.9	+10.1	+3.5
July	+10.1	+ 4.9	+19.3	+3.9	+24.8	+2.1	+17.8	+4.1	+14.7	+4.1

1/ Source: California labor statistics bulletins, Nos. 191-204. The data are not from complete industrial totals, but are based on reports submitted by a representative sample of firms.

(A) Less than one-tenth of one percent.

(B) No change.

Despite changes in census classifications, the "lumber and timber basic products" of the 1939 census is essentially similar to the group of "lumber and timber products not elsewhere classified" of earlier years. Following trends in this major group over a period of years, the number of wage earners shows a steady increase from 11 to 25 thousand over the 28 years from 1899 to 1937 (table 6). By 1929, the average number for the year had dropped slightly and it slumped enormously for the next four years, reaching a low of 9,776 in 1933, and then recovering rapidly to a reported 18,000 in 1937. Gradually over the years, wage earners in lumbering have formed a less important part of total wage earners in all manufacturing in California, dropping from 13.5 percent in 1904 to 6 percent in 1937. This is due to both a relative and absolute decline in the lumber industry, for not only has the value of lumber and timber products decreased, but also recent and rapid growth of other industries has resulted in lessened proportional significance attributable to the lumber industry.

Not only are there yearly fluctuations, but seasonal changes in numbers of wage earners also are common. Demand for wage earners is heaviest during the six months, May through September, with the peak being reached at about 120 percent of the yearly average sometime during July, August, and September. December, January, and February are the quietest months with demand dropping to 75 percent of the mean (table 7). These seasonal variations are characteristic and quite constant from year to year.

A tabulation of statistics by counties (table 8) for sawmills, veneer mills, and cooperage stock mills, including those combined with logging camps and planing mills, shows that over 50 percent of this industrial group in terms of wage earner months, wages, or value of products, is located in three counties, namely, Humboldt (including Del Norte)4/, Siskiyou and Lassen. Plumas, Mendocino and Modoc Counties are also important producers of lumber. This entire segment of the industry, with its 16,355 wage earners, is located in 32 counties which are mainly in northern California, thus leaving 26 counties without a sawmilling industry.

Primary and Service Population

Although the difficulties of ascertaining primary and service populations with reasonable accuracy are so pronounced that little weight is sometimes attributed to the results, nevertheless an estimate has been made of the probable primary populations dependent on the lumber and timber products industries.

The primary population is considered to consist of workers engaged in the manufacture of lumber and timber products plus their direct dependents. On the other hand, the service population is comprised of the "butchers, bakers, and candlestick makers" plus their dependents that are a necessary adjunct of the primary population.

4/ Where data are given by groups of counties, the purpose is to avoid disclosing information about individual establishments.

Table 6.- California lumber and timber products by years, 1899-1937

Year	Establishments	Wage earners	Wages	Value of products	Value added by manufacture	Total wage earners all manufactures	Percent lumber and timber wage earners are of total
	Number	Number	(000)	(000)	(000)	Number	Percent
1899	276	10,664	$ 5,148	$13,718	$ 8,006	-	-
1904	308	13,181	8,644	18,276	13,006	97,782	13.5
1914	209	15,087	10,912	22,973	16,162	134,906	11.2
1919	195	16,057	22,849	47,311	36,772	235,916	7.2
1921	204	19,290	24,980	51,380	37,191	194,107	9.9
1923	206	24,772	38,246	86,959	63,281	241,007	10.3
1925	154	24,954	33,431	72,815	51,539	245,830	10.1
1927	140	24,909	34,362	69,754	49,449	254,763	9.7
1929	148	21,822	32,465	65,198	54,333	281,498	7.8
1931	115	11,269	13,747	28,006	22,563	203,491	5.5
1933	95	9,776	9,182	20,830	15,703	191,861	5.1
1935	134	14,251	16,333	37,444	28,674	246,223	5.8
1937	177	17,977	25,169	56,638	41,127	302,184	6.0

Source: Research Dept. Calif. State Chamber of Commerce and U. S. Census of Manufactures.

Table 7.- Number of wage earners by months in lumber and timber products industry. 1929 and 1937.

Month	Wage earners			
	1929		1937	
	Number	Percent of yearly mean	Number	Percent of yearly mean
January	16,183	74	13,708	76
February	16,157	74	13,749	77
March	17,703	81	15,207	85
April	21,586	98	16,891	94
May	24,987	114	19,797	110
June	25,165	115	20,983	116
July	26,158	119	21,318	118
August	26,719	122	21,140	117
September	25,742	118	20,901	116
October	24,371	111	19,993	111
November	20,972	96	17,624	98
December	16,116	74	14,416	80
Average for year	21,822	100	17,977	100

Table 8.-Summary Statistics for the "Sawmills, Veneer Mills, and Cooperage-Stock Mills Including Those Combined with Logging Camps and Planing Mills" Industry, State of California. 1939[1]

County[2]	Number of mills	Total wage-earner months	Wages	Value of products
California, total	142	196,261	$22,050,915	$52,471,914
Humboldt) Del Norte)	21	46,866	4,847,744	13,366,230
Siskiyou	12	34,697	4,175,540	9,803,429
Lassen	6	29,936	3,493,056	6,901,448
El Dorado) Sierra) Nevada) Placer) Tuolumne)	13	13,951	1,730,913	4,324,823
Merced) Fresno) Mariposa)	9	17,485	2,031,246	4,296,733
Plumas	11	11,981	1,395,387	3,511,037
Mendocino	16	17,205	1,710,579	3,422,718
Modoc	8	10,785	1,238,393	3,136,458
San Diego) Tulare) Inyo)	4	1,970	252,040	1,050,771
Shasta	11	3,641	359,550	979,419
Butte) Lake) Yuba) Tehama) Trinity)	13	4,017	473,242	843,141
Santa Cruz) Sonoma)	6	2,542	235,184	515,402
Amador) Calaveras)	6	903	87,866	257,107
Kern) Madera) Napa) San Mateo)	6	282	20,175	63,198

1/ Source: U. S. Bureau of the Census.
2/ Where data are given by groups of counties the purpose is to avoid disclosing information about individual establishments.

In the land use report for California submitted in 1934 by the Forest Service to the National Resources Board, the size of family of woods workers was considered 2 to 4 persons, including the gainful wage earner, depending on whether the region used a mixture of lumberjack floaters and local people or the latter only. For other workers on forest lands or in forest industries an average size family of 4.25 persons was assumed. A converting ratio of 3.60 is used as a compromise between the 3-person family of the average woods worker and the 4.25-person family of the average non-woods worker. Thus the primary dependent population in table 9 is obtained by multiplying the number of primary wage earners by 3.60, and rounding to nearest 10. Altogether it is estimated that in 1939, 77,330 people were directly dependent on the lumber and timber basic products industry.

There is even more difficulty and greater chance of error in estimating service population. In Utah, ratios between primary dependent and service populations have been determined at about 1 to 1 for agricultural pursuits and 1 to 3 for manufacturing enterprises.5/ It seems conservative therefore to adopt a ratio of 1 to 2 for forest populations, considering them to be part agricultural and part manufacturing. The service population would by this ratio equal 154,660 persons for the lumber industry.

Although the data in table 9 are only rough approximations, it may be summarized speculatively that, in the California lumber and timber basic products industries in 1939, there were about: 20,000 gainful workers; 77,000 people primarily dependent on the industry; a service population of 155,000, and about 232,000 persons both directly and indirectly dependent on the industry. This constitutes roughly one-fifth of the total population in the 32 counties which have a lumber industry.

The same ratios, when applied to the furniture industry as well, indicate that for both lumber and timber basic products, and furniture and finished lumber products, there are about 35,000 wage earners, a primary population of 125,000, a service population of 250,000, and a total dependent population of 375,000 persons (table 9).

Estimated Potential Population

In 1934, estimates were made of potential populations having major and minor dependence on forest lands under the kind and intensity of land use offering greatest promise of maximum common benefit. These were prepared jointly by the California Regional Office and the California Forest and Range Experiment Station of the Forest Service for the lands committee report of the National Resources Board, and in cooperation with the Giannini Foundation of Agricultural Economics, the Agricultural Adjustment Administration, the State Planning Commission, and the U. S. Biological Survey (now the Fish and Wildlife Service). According to the report:6/

5/ Vandegrift, R. A. and associates. The economic dependence of the population of Utah. 38 pp., illus. Salt Lake City. 1931.
6/ U.S.Dept. of Agriculture, Forest Service. Land use Planning Material Prepared for the National Resources Board Lands Committee Report. (1934).

Table 9.- Wage earners and primary and service populations dependent on lumber and timber basic products and furniture and finished lumber products in California. 1939. (Rounded to nearest 10)

Item	Lumber and timber basic products	Furniture and finished lumber products	Both groups combined
	Number	Number	Number
Wage earners	21,480	13,210	34,690
Primary dependent population	77,330	47,560	124,890
Service population	154,660	95,120	249,780
Total dependent population	231,990	142,680	374,670

"These--------(estimates)-----give----an approximation of the number of persons to whom the use of the lands, or of the resources thereof, or employment in the protection, improvement or management of the lands, or in utilization of resources thereof, is essential to their continued economic and social well-being. Persons to whom such use or employment represents more than one-half of their source of livelihood should be classed under 'Major Dependence', those to whom it represents less than one-half their source of livelihood should be classed under 'Minor Dependence'."

In this report different forest areas were recommended for intensive, extensive, or protective management, and populations were estimated for the proposed areas under each of these three intensities of land utilization. In addition, population dependent on parks, natural areas, recreation, wildlife refuges, and shooting grounds was enumerated because many such areas are forest lands. These estimated populations, which are given in table 10 for different uses and for the whole State[7/] include not only gainful workers, but also provide for their direct dependents at the rate of 4.25 persons per average size family, except for woods workers whose families were assumed to be from 2 to 4 persons. Service population is not included.

Altogether it is estimated that nearly 377 thousand persons will have major dependence on forest land if recommended land use is put into effect, plus some 463 thousand additional persons with minor dependence. Siskiyou, Trinity, Plumas, and Shasta Counties will have the largest numbers attributing major dependence to intensive forest management. The 300 odd thousand expected to have major dependence on the three kinds of forest management is nearly 4 times as large as the 1939 primary population of 77 thousand dependent on lumber and timber basic products and over twice as large as the 125 thousand persons primarily dependent on both basic lumber and finished lumber and furniture products.

A more recent and perhaps more realistic approach is the estimated man-days of labor and superintendence required in a six-year work program on the national forests in California. This program, which contemplates socially and economically justifiable work not only in timber growing but also in the other fields of multiple use such as fire control, recreation, research, range and wildlife management and general administration, was developed originally in 1937 and is now being revised in 1941 in order that the Forest Service will be prepared to do its share in easing the anticipated post-war unemployment crisis. In brief, the program provides for about 1,061,000 man-days of recurrent work (work that must be repeated every year) and 10,593,000 man-days of non-recurrent work (work that will need to be done only once). If this non-recurrent work is distributed evenly over the period, the annual requirement for both recurrent and non-recurrent work totals 2,826,500 man-days. Assuming 250 man-days per year, approximately 11,300 wage earners will be employed, and if the same factors for primary and service population are applied as earlier in the report, the total primary population dependent on this work program becomes 40,700 persons; service population about 81,400; or in round numbers a total dependent population of 122,100.

7/ Detailed county data are available but have been omitted for brevity.

Table 10.- Potential major and minor primary populations dependent on forest land under recommended land use in California. 1934

Recommended land use offering greatest promise of maximum common benefit	Estimated potential population	
	Major dependence	Minor dependence
	Number	Number
Forest Management		
Intensive	226,403	247,770
Extensive	10,211	13,040
Protective	71,966	99,987
Parks, natural areas and recreation	65,958	100,180
Wildlife refuges and shooting grounds	2,127	2,419
Total all types of land use	376,665	463,396

Since the national forests of some 20 million acres comprise only one-fifth the area of California and include less than half the total forest land area in the State, a similar program applied to other forest lands as well might double the above dependency estimates. Already a like State and County program is being developed for private forest lands located within gross boundaries of the national forests.

Summary

1. Forest industries are important to the economy of California. Among manufacturing enterprises in 1939, the combined industrial groups of lumber and timber basic products, furniture and finished lumber products, and paper and allied products ranked third in number of establishments, second in number of wage earners, second in wages paid, fifth in cost of materials, fourth in value of products and second in value added by manufacture.

2. The defense program has greatly stimulated forest industries. Production and orders have increased while stocks have decreased; shortages in certain items are developing; railroad car loadings of lumber, piling and ties have jumped 50 percent in two years; employment is up 20 percent, and availability of sawyers, filers, and other skilled labor is strictly limited.

3. Further increases in dependency on forest land are expected primarily through intensified land management, and to a lesser degree through further industrialization. Present and estimated future dependency are useful criteria for appraising the effectiveness of forest lands in cushioning anticipated post-war unemployment.

4. In 1939 in both lumber and timber basic products and furniture and finished lumber products, it is estimated that there were 35,000 wage earners, a total primary population of 125,000, a total service population of 250,000, and a total dependent population (both primary and service) of 375,000.

5. Humboldt (including Del Norte), Siskiyou and Lassen are the leading sawmill counties. Over half the State total of wage-earner months, wages paid and value of product is located in these counties. Some 32 counties, which are mainly in northern California, have a primary sawmill, veneer mill and cooperage mill industry.

6. Estimates in 1934 of potential population having dependency on forest lands under the kind and intensity of land use offering greatest promise of maximum common benefit showed 309,000 persons with major dependency on forest management, 66,000 dependent on parks and recreation, 2,000 on wild-life refuges and shooting grounds or a total of 377,000. These estimates included both gainful workers and dependents but not service population.

7. A Forest Service six-year work program designed for initiation after the war is intended to ease anticipated unemployment and develop more intensively national-forest resources. Annual work requirements under this program are about 11,300 workers, which may mean primary dependency of nearly 41,000 people. Application of a similar program to other forest lands in California might double this number of workers and dependents.